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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,582	07/07/2003	Dennis A. Kramer	60130-1625; 02MRA0367	7654

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EXAMINER	
WILLIAMS, THOMAS J	

ART UNIT	PAPER NUMBER
3683	

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/614,582	KRAMER ET AL.	
	Examiner	Art Unit	
	Thomas J. Williams	3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13,15-19 and 21-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4,13 and 15* is/are allowed.

6)☒ Claim(s) *1-3,5-12,16-19 and 21-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Acknowledgment is made in the receipt of the amendment filed February 3, 2005.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5-12, 16-19 and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,392,558 to Heibel.

Re-claim 1, Heibel discloses a brake assembly comprising: a caliper (interpreted as part of housing 9, column 1 lines 12-13 and column 4 lines 22-27 describes the actuator used with a disc brake, which will include brake pads and a caliper as is known in the art); a brake actuator 3 (figure 1) is in communication with the first brake pad, the actuator comprises a first threaded member 21 rotatable about a first axis and a second threaded member 33 rotatable about a second axis; the first threaded member has first threaded characteristics 5 for moving the brake actuator at a first linear speed (due to the pitch of the threads) and a first force by rotation of the first threaded member, the first threaded member encountering a friction level when rotating (such as when the pad initially contacts the rotating disc rotor); the second threaded member has second threaded characteristics 7 for moving the brake actuator at a second linear speed (due to the pitch of the threads) and a second force by rotation of the second threaded member; the first linear speed is greater then the second linear speed (since the thread pitch for the first threaded member is greater than the thread pitch for the second threaded member, this is consistent with

the applicant's invention, see page 2 paragraph 7) and the first force is lower than the second force (see column 4 lines 27-30 and lines 48-50), the first threaded member is configured to stop rotation when the friction level meets a predetermined threshold (such as encountered when the actuator initially contacts the rotor, see column 4 lines 22-36, this is consistent with the applicant's invention as disclosed on page 7 paragraph 26). The initial reaction force encountered when member 3 moves into contact with the rotor will cause an increase in friction at the first threaded member, upon which continued rotation of shaft 1 will result in rotation of the second member.

Re-claim 2, a first thread pitch 5 is greater than a second thread pitch 7, see column 3 lines 20-22.

Re-claim 3, the caliper has a first hole (defined by element 19) having threads about the same as the first thread pitch 5, the first hole rotatably receives the first threaded member.

Re-claim 5, the first axis is coaxial with the second axis.

Re-claims 6 and 21, the first threaded member is coupled for axial movement with the second threaded member.

Re-claims 7 and 22, the second threaded member is decoupled from axial movement with the first threaded member when the friction threshold is met.

Re-claim 8, the friction level is met due to the reaction force from the first brake pad on the brake actuator encountered when the pad engages the rotor.

Re-claims 9 and 17, the shaft 1 is rotatable by any well known means, including an electric motor, which will be coupled to the second drive mechanism.

Re-claims 10-12, Heibel discloses a brake assembly, comprising: a brake; a brake actuator; a first drive mechanism 21; a second drive mechanism 33; a first linear speed of the first drive mechanism is faster the a second linear speed of the second drive mechanism, a first force is lower than a second force; a first threaded member 21 has first thread characteristics 5, a second threaded member 33 has second thread characteristics 7, wherein the second drive mechanism is configured to drive the brake actuator 3 as a consequence of the brake engaging the brake actuator; a first thread pitch 5 is greater than a second thread pitch 7, see column 3 lines 14-22 and column 4 lines 22-39. The first drive mechanism is designed to take up slack between the brake actuator and the brake (associated with shaft 65), after which the second drive mechanism drives the brake actuator and applies a braking force to the disc.

Re-claim 13, Heibel discloses a brake assembly, comprising: a brake; a brake actuator; a first drive mechanism 21 for driving the brake actuator, the first drive mechanism has a first linear speed (due to thread pitch of 21) and a first force; and a second drive mechanism 33 for driving the brake actuator, the second drive mechanism has a second linear speed (due to thread pitch of 33) and a second force, the first linear speed is faster than the second linear speed (first thread pitch is greater than the second thread pitch resulting in a faster linear speed) the first force is lower than the second force; the first thread pitch is greater than the second thread pitch; a first threaded body 19 has a first hole with threads about equal to the first thread pitch, a second threaded body 3 has a second hole with threads about equal the second thread pitch, the first hole rotatably receives the first threaded member and the second hole rotatably receives the second threaded member.

Re-claim 15, the first rotational friction level between the first threaded member and the first threaded body is initially less the second rotational friction level between the second threaded member and the second threaded body.

Re-claim 16, the first drive mechanism is sequentially operable relative to the second drive mechanism.

Re-claim 18, Heibel discloses a method of braking, comprising: (1) moving a brake actuator at a first linear speed and a first force; (2) moving the brake actuator at a second linear speed and at a second force; (3) applying the brake actuator to a brake pad wherein the first linear speed is faster than the second linear speed (due to a greater thread pitch for the first drive mechanism 21) and the first force is less than the second force, see column 4 lines 18-39, wherein the second step (2) or (b) occurs after a predetermined threshold is reached, see column 4 lines 30-39 in which the second drive mechanism only operates after a threshold is reached.

Re-claim 19, column 4 lines 22-23 discloses that the first step occurs first.

Re-claim 23, the brake in combination with shaft 65 creates the force on the brake actuator causing the second drive mechanism to drive the brake actuator.

Allowable Subject Matter

4. Claims 4, 13 and 15 are allowed.

Response to Arguments

5. Applicant's arguments filed February 3, 2005 have been fully considered but they are not persuasive. Heibel clearly discloses in column 4 lines 22-28 that actuator member 3 is moved into an initial engagement with the rotor at a high rate of speed (i.e. quick take up, line 28, see also first fast thread 5, line 21) due to the rotation of threaded member 21. As in the instant

invention a reaction force will be encountered, this reaction force will increase a friction in the fast threads 5 preventing further rotation (see column 4 lines 28-31, in which it is stated that the fast threads cannot cater for the application of the required braking load). At this point the second threaded member (or second drive mechanism), having a pitch angle lower than the first threaded member for producing a greater force, is rotated and provides the required braking force. As such the second drive mechanism is configured to move the brake actuator 3 as a consequence of the reaction force from the pad on the brake actuator (see column 4 lines 22-26), this will occur after the predetermined frictional threshold is achieved in the first threads 5.

Conclusion

6. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is 571-272-7128. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Bucci, can be reached at 571-272-7099. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

PRIMARY EXAMINER

Thomas Williams
AU 3683
4-15-05

TJW

April 15, 2005